

Divisional Appl. No. _____
Preliminary Amdt. dated July 11, 2003

Amendments to the Specification:

Please replace the title of the patent application as follows:

~~CAPACITIVE VACUUM MEASURING CELL~~
PROCESS FOR MANUFACTURING AL₂O₃ MEMBRANE

Insert the following new paragraph on page 1, below the title of the application:

Cross-reference to Related Applications:

This patent application is a divisional application based upon co-pending U.S. patent application Ser. No. 09/219,090, filed December 22, 1998, soon to be issued as U.S. Patent No. 6,591,687, and the benefit of such earlier filing date is hereby claimed by Applicant under 35 U.S.C. §120. In turn, parent application Ser. No. 09/219,090 claims foreign priority rights, under 35 U.S.C. §119, on the basis of prior-filed Swiss patent application Ser. No. 1997 2950/97, filed December 23, 1997, and the benefit of such foreign priority date is also claimed by Applicants herein relative to this divisional patent application.

On page 6 of the patent application specification, replace the first paragraph (lines 2 – 23) with the following revised paragraph:

Suitable Al₂O₃ membranes are manufactured, as is usual in the ceramic industry, by first mixing a slurry according to a specific recipe, and by thinly and evenly spreading the doughy mass on a strip shaped carrier material, for example, a plastic foil. After drying, these layers are inspected for irregularities such as bubbles or pits. This mass, which is not sintered yet, is referred to as the green body. The desired membrane shape is cut out of the strip shaped green body material, after which the material is still sticking to the plastic foil. For cutting, tools such as knives or punching tools are used, preferably or a laser. Cutting or scoring of the green body requires particular care that no dislocations or warping against the surfaces of the future ceramic membrane occur, as this also influences the degree of surface unevenness. If a cutting knife is used, a pressing wheel can

be applied on the membrane side which prevents undue warping of the green body. Subsequently the preferably circular cut membranes are separated from the foil strip by drawing off the latter, for example, across an edge. The membranes are subsequently sintered in a furnace. For sintering, the membranes are preferably placed on hard-sintered, flat Al_2O_3 plates that can be stacked on top of each other, and sintered typically at 1630°C. The temperature is gradually raised to 1630°C over a period of approx. 400 minutes, which corresponds to a temperature rise of about 40°C per minute. The temperature is then held for a few minutes at this level, for example, 6 minutes, and then slowly decreased at the rate of about 3°C per minute over 210 minutes to 1000°C, and in a second step, with a temperature reduction of about 6°C per minute over about 170 minutes, to room temperature. The result is a ceramic membrane which, in contrast to the green body, has a hard pure ceramic structure, and the additives of the green body material have evaporated. After this sintering step, the membrane is very uneven and, at a diameter of 40 mm, has a warpage of several millimeters.